

## ABSTRACT OF THE INVENTION

A system and method are provided for linearizing the tone scale of individual colors in a multi-color printing system, by deriving a  
5 prescribed tone scale of individual colors in a single or multi-color printing system. Full linear ink gradations are printed on multiple substrates, and a linearization table is generated with multiple points for each of the multiple substrates and/or ink gradations. A polynomial curve is fitted to the points of each linearization table to generate polynomial curves. At least one point in  
10 the polynomial curves is selected, that shows high variation from one curve to a next curve, and coefficients of a group of polynomial curves are plotted as functions of the value of the at least one point. The range of prediction can be as narrow or as broad as an application requires. Finally, a prescribed tone scale table is derived from the polynomial curves and the at least one point. A  
15 measured set of values can be compared against a predefined database, and the most applicable transformation is then selected. The data can be corrected to any suitable curve shape.